Maximizing the Reliability of Your Equipment with Vertiv™

Benefits

The power of preventive and predictive maintenance

In managing critical infrastructure, data center operators have two missions that are connected: reducing outages and downtime and extending the equipment's life.

Preventive and predictive maintenance will help you successfully accomplish both tasks and maximize the reliability of your equipment.

Preventive Maintenance: Anticipating Failures

Data from the Uptime Institute shows that 76%[1] of data center outages are preventable. Vertiv Preventive Maintenance (PM) Services are a key measure to achieve this, as they allow to:

- Optimize the operation of the equipment by fine-tuning and continuously updating the systems.
- Detect failures before they generate an outage.
- Decrease the response time to an incident.

The number of preventive maintenance (PM) visits has a substantial impact on system availability.

Proven results:

The relationship between preventive maintenance (PM) per year and the mean time between failures (MTBF) of the UPS is directly proportional. The higher the amount of PM, the higher MTBF.[2]

How to define the frequency of the visits?

Vertiv recommends following this guide, as an acceptable minimum. However, to define the number of preventive maintenance visits per year, specific factors to the installation must be considered, such as environmental conditions (climate, height and humidity) and system reliability, among others.

Equipment	Frequency
UPS < 60Kva	1 a 2 visits per year
UPS > 60Kva	2 a 4 visits per year
Chiller	1 o 2 visits per year
Direct Expansion	2 a 4 visits per year
DC Power	1 visit per year
Other Vertiv™ Products	1 visit per year

Predictive Maintenance: Securing your investment

Analyzing the life cycle of the equipment, taking into consideration the recommendations for component replacement, will allow you not only to keep the unit in a reliable operation but also to make a more efficient and controlled investment.

Proven results:

Vertiv equipment has an end-of-life design of 10 years. Well-maintained units, which comply with an adequate component replacement plan, can continue to provide economic benefits for at least 5 years.

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When to replace your equipment?

It is normal that over time some equipment components will start to wear out. To avoid system failure, Vertiv recommends scheduling replacements as follows:

Components	Life Expectancy	Recommended Replacement
AC Capacitors	10 years (aprox. 100,000 hours)	At 5/6 years
CC Capacitors	15 years (aprox. 150,000 hours)	At los 5/7 years
Fans	7 years (aprox. 62,000 hours)	At 5/6 years
Air Filters and Humidifiers	1 to 3 years	Check 2 to 4 times/year
Lithium Batteries	10 years	At 8-9 years
Sealed Lead-Acid Batteries	5 years/10 years	At 3-4 years / At 6 a 8 years
Vented Lead-Acid Batteries	10 to 20 years	1 to 2 years before the end ofuseful life
Power Modules	10 years	9 years
EC Fan- Pumps- DC Rectifiers-Switches	7 to 10 years	At 6/9 years
Compressor	10 years	A los 9 years
Contactors	5 years	A los 4 years

The risks of not replacing components on time:

- The equipment is exposed to faults that can spread to other components.
- The performance of the equipment is considerably affected, both energetically and dynamically.
- Will increase the probability of failure and downtime.

What happens when the equipment has been in operation for more than 10 years?

When a piece of equipment has this condition, Vertiv recommends performing a logic update, that is, an upgrade or overhaul of the equipment.

Want to learn more about Vertiv's portfolio of services?

More information here

Reference

[1] Uptime Institute. Uptime Institute Global Data Center Survey 2021

[2] Vertiv. The effect of regular, skilled preventive maintenance and remote monitoring on critical power system reliability

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